Wetlands Regional Monitoring Program
Technical Advisory Committee Meeting
Tuesday, October 15, 2024 9:00 - 11:00

Attending: Alex Braud, Alex Thomsen (attended first hour), Alison Weber-Stover, Annie Sneed (joined in second half), April Robinson, Aviva Rossi, Christina Toms, Cristina Grosso, Donna Ball, Ellen Plane (joined in second half), Hannah Kempf, Iryna Dronova, Jeremy Lowe, Josh Collins (left at 10:30), Julian Wood, Julie Gonzalez, Karen Thorne, Kelli McCune, Kelly Iknayan, Levi Lewis, Lisa Beers, Lyndsay Rankin, Pete Kauhanen, Sasha Harris-Lovett, Stuart Siegel, Susan De La Cruz (attended first hour), Todd Hallenbeck (left at 10:34), Valary Bloom, Zooey Diggory (left at 10:30)

NOTES:
Meeting Slides, Handouts, Agenda

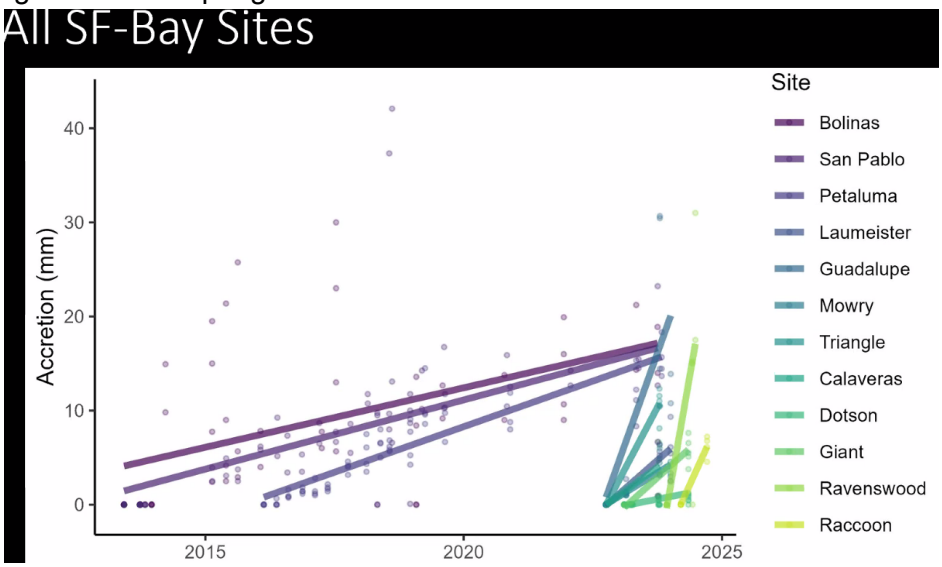
1) Welcome & Once-Around (Christina Toms, RWQCB and Donna Ball, SFEI)

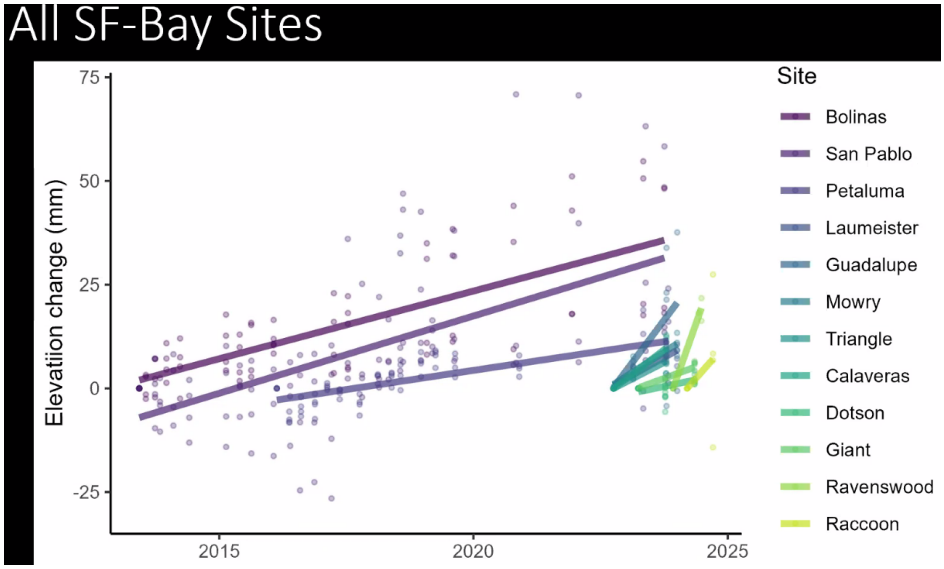
- All TAC members - introduction to TAC member pets; request for more cat photos.
- Jeremy - asked about BDSC
    - Christina Toms - WRMP had an entire session, described talks:
        - Aviva Rossi and Lisa Beers: Intro to the WRMP
        - Alex Braud: Baylands Habitat Map
        - Lyndsay Rankin: SF Estuary SETs
        - Dan Nowacki: Sediment transport + accretion in South Bay
    - WRMP oral session at the Bay Delta Science Conference as well as posters
- BCDC Shoreline Adaptation - Todd Hallenbeck - Draft guidelines intended to help shoreline communities. Cover a lot, but cover goals around ecosystem health and resilience. Identifying opportunities for ecosystems to migrate.

2) WRMP Implementation Updates - Christina Toms (RWQCB)

- 2025 LiDAR Cost Share Reminder (Alex/SFEI)
    - Working with NOAA working with a contractor
- Bird Workgroup Update (Aviva and Donna/SFEI)
    - Aviva gave an update; going good so far in recruiting WG members
- P&W WG Update (Alex Thompson/SFEP)
    - Representation in Wetland Decision-Making Survey
        - Survey that she presented to us at the last TAC meeting was approved at the last SC meeting.
        - Starting data collection in winter/early spring
        - They plan to administer this survey to the TAC at the next TAC meeting if time allows

3) **SET Data Summary** - Lyndsay Rankin (USGS)

- SET data collected at a range of marsh types within the Bay
- Deep rod SETs have been installed by Karen's team, along with marker horizons
- 12 marshes have deep rod SETs, over 50 stations total, usually 4 per site
- Database has over 50 stations with additional sites in Delta
- Sampling in Fall and Spring
  - 

  - 

- Dutch Slough / Oakley - 6 SETs to be installed in Nov 2024
- Dotson Marsh added in 2023
- Older sites - Bolinas, San Pablo, Petaluma - installed in 2014 - more accretion in edge sites compared to interior - to be expected
- South SF Bay sites - installed in 2023 - more variation within sites
- Ravenswood - SET closest to breach is eroding, to be expected; other SETs have similar trajectory
- Raccoon Island - 4 SETs installed at the southern part of island, 2 pickleweed, 2 Bolbo

- Fall 2024 sampling, hopefully will relocate older (not deep rod) SETs from Callaway, 4 sites left
    - 

- **SET Questions**
    - Stuart - how elevations of SETs are surveyed, frequency of survey,
        - Lyndsay - RTK survey every time measurements happen (1-2 cm accuracy, SmartNet system), starting to do more detailed leveling this year (to be done every 2-3 years)
        - Stuart expresses concern about SET elevation change related to RTK uncertainty
        - Karen T. - intent of measurements is slopes, just observed change, not tied into geoid currently, intent is relative change to itself, not absolute
        - Stuart expresses concern regarding SETs sinking
        - Karen - that's why everyone has moved to deep rod SETs, have seen extremely little movement except for Humboldt bay (due to earthquakes).
    - From chat: Josh Collins - I appreciate Stuart's questions. I hope the program establishes local deep-seated benchmarks and ties the SETs to them with sufficiently accurate on-site leveling to relate the data within a site to its local tidal datums and perhaps NGVD, and to relate one site to another.
        - Christina Toms. There can be an inherent error range, but that doesn't mean the data have no utility. We can consider them within their appropriate landscape context.
        - Stuart in chat: I concur with Josh. It's great that repeat RTK surveys typically show stability (within RTK uncertainty). Results in excess of that uncertainty are great to see, data within that range needs to be clearly identified as within RTK uncertainty. Leveling in to establish tighter vertical uncertainty helps solidify these findings and root out data where concerns exist.
    - Jeremy - map of SET distributions
        - Lyndsay - currently only measuring USGS SETs, but will start to measure historic SETs
        - Donna - 1st year to find SETs, 2nd year to start reading them
- Christina Toms - important to fill in coverage holes throughout the estuary, link to work of Bay RMP sediment workgroup

4) **Project Tracker** - April Robinson (SFEI)

- Create Annual Tidal Marsh Restoration Dataset - based on Project Tracker
    - Project Tracker is a valuable resource, but there is value in having a versioned citable product.
        - This pulls out a subset of data most useful for WRMP and updates that annually.
        - Separate - but will keep it aligned with Project Tracker. Updates to this dataset will go back into Project Tracker, so Project Tracker will be kept up to date as updates made to the next versioned citable data.
        - Gives an extra layer of review, and the TAC should be part of that review.
        - Makes it more cite-able
            - Frozen in time - versioned - people will know exactly what version was used in different analyses.
    - Data layer, update annually
        - Tidal marsh restoration project completed, or implementation already started.
        - Important for regional coordination
        - Annual release of Data - opportunity for communication and outreach, celebrating restoration progress.
        - How we are tracking the tidal marsh extent in the Bay. We want to be explicit about what we are talking about. BHM + Project Tracker for definitive numbers for how much marsh, and how much restoration, in the Bay.
        - Project Tracker data we can rely on was the main motivator.
    - Process:
        - Project Tracker Data
        - Standardized categories
            - Data fields
            - Query details
        - Data at a lot of levels; do you want to see more information?
    - Dataset currently does not include projects in planning stage, enhancements that don't create new marsh, non-tidal marsh projects or those in the Delta (not included because focus is on the WRMP currently but identified as crucial to be done)
        - From chat: Kelli McCune - We need to talk to Delta Stewardship Council about using Project Tracker to add Delta projects
            - From chat: Christina Toms - Denise is out on vacation right now but when she gets back, we can coordinate with her and Dylan
            - From chat: Todd Hallenbeck - Rachel Wiggington manages project data in PT for projects funded by the Delta Conservancy
            - Kelli concurs about including Rachel
            - Stuart - Delta will need some up-front decisions re what to include and exclude. The large sites and more recent projects are

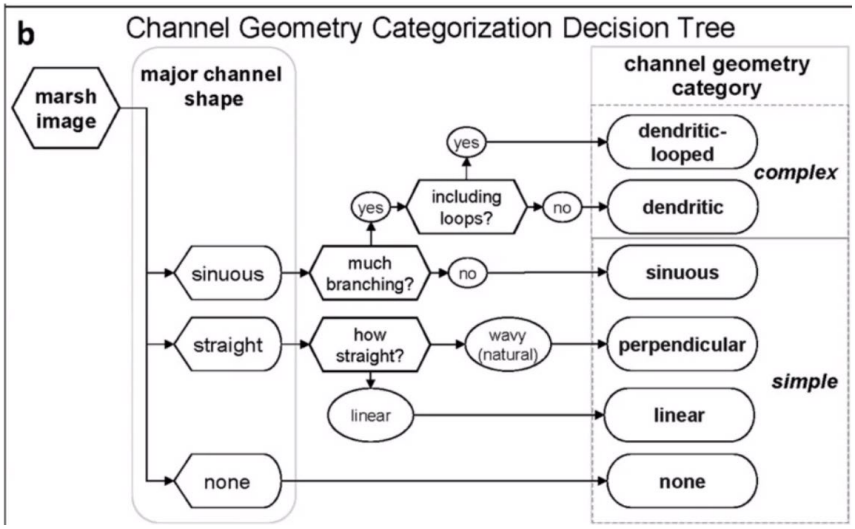
relatively "easy". The many smaller and older projects will be hard, often involve habitat "strips" with levee setbacks and levee repairs, etc. 20 years+ ago CALFED gave me two boxes documenting numerous ERP-funded projects that ended up being exceedingly difficult to map. Drawing a clear line of what's in and out will help a lot!

- Would like to do this 1x/year, share current data layer with TAC - and make sure our dataset/map is up to date.
    - First release will be the 2020 data to align with BHM, next release will be through 2023, and next year the 2024 data will be released
- April wants feedback on breach dates and how the data review was.She wants to make sure that it reduces time
- Wants comments by October 28 so that we can get our updates done in early November for internal, will do public update later in the month
- Web map link for data review: wrmp_habitat_extent
- **Questions on Project Data Layer**
    - Stuart - how best to go about providing comments, doesn't want a new comment to affect older ones; he thinks it's clunky but understands that this is the first rollout; super excited about this
        - Separate intentional vs unintentional breeches, regulatory implications
            - https://bayplanningcoalition.org/downloads/library/The_McAteer-Petris_Act-_as_amended_through_1995.pdf
            - April - How to define these and what are the regulatory implications - need to think on this
        - In-progress sites - there no standard for how it's categorized so difficult to include; Stuart recommends interns
        - Cristina Grosso - Current activity status definitions: https://ptrack.ecoatlas.org/HRPTrest/rest/showlookuptable?which=447
    - From chat: Josh C. - Regarding "proposed" projects, would it be helpful to link Project Tracker to the NOI process? That might be a way to learn what potential projects are in the early stages of invention.
    - Valary Bloom from Chat - "I reviewed this AM. Nice work. In noticed Palo Alto Hor Levee has no polygon (all permitted and ground breaking now or very soon I believe). It's a horizontal levee and sets back a levee but not technically for marsh restoration so maybe that's the reason for exclusion. (Provides high tide refugia and maybe tiny bit of marsh migration space with future sea levels rise.) Is that why not included?"
    - Zooey Diggory
        - Is there a project that's too small?
            - There is a size cutoff: 1 acre
            - Zooey responded that she understands the mapping cut-off but does want to celebrate the small accomplishments
        - Public vs not public data

                - This map only included public data at the moment; but not public data can still be used
                - BEHGU extent numbers are hard to reproduce because there were non public data included but no one knows what was/wasn't
            - She knows about 'projects that she knows about' regarding smaller sites, is curious who to talk to about other people who 'know about their projects'
            - What is the outreach about the PT updates?
                - Cristina Grosso - Todd H from BCDC is organizing an EcoAtlas user forum to look into improvements on use and edits
    - Julian Wood
        - Cut short on time to ask question but is excited about this and the integrated effort; hard to keep track of things in spreadsheets, personal shapefiles
    - From chat
        - Stuart - Commenting will take time, it's a huge data set and my quick look yesterday IDed a lot of items so it is hours needed to be fit in with other workload. I do wonder whether SFEI has used a couple data sets I've shared. Then data sets by others like what Julian Wood mentioned.
        - Josh C - Maybe we should revisit the idea of the using the Tracker as a public forum by creating site-specific chat rooms? Content control will matter. But given that, then the Tracker could become part of public outreach and communication to build public awareness and political will to support restoration.
        - April - please email me to provide feedback / follow up meeting
        - Valary B. - I reviewed this AM. Nice work. I noticed Palo Alto Hor Levee has no polygon (all permitted and breaking ground now or very soon I believe). It's a horizontal levee and sets back a levee but not technically for marsh restoration so maybe that's the reason for exclusion. (Provides high tide refugia and maybe tiny bit of marsh migration space with future sea levels rise.) Not enough restoration to be included, I presume?
            - April - That's right, we didn't include these types of horizontal levee projects because they aren't creating more tidal marsh. But maybe that's a category of projects we can include in this dataset in the future.

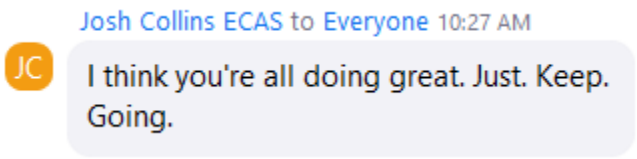
5) **Tidal Marsh Typologies -** Annie Sneed/Jeremy Lowe/Alex Braud (SFEI)

- Critical to set up a baseline for tracking geomorphic change over time - understanding the "hows" of marsh change can point towards targeted actions/interventions
- Certain metrics have variety depending on the background/history
- Viewing this as an attribute to add into our data to improve analysis
    - Nested Hierarchy
        - This would be for the Analysis Unit Level
    - Could be filtered to attribution - enable analysis on these metrics

    - Form and Function of Marshes that depend on their history and channel networks
- Wants feedback on typologies - do you have your own….
- Jeremy
    - Why: Help us understand the metrics and information
    - Need to tie to history of marsh and modifications
    - All laid out in WRMP Program Plan
        - Does appear as a modifier in habitat classification
        - Take note that we might find things that we don't expect to see
        - We need to take note of ones that are outliers, that don't fall within our existing boundaries/categories
    - Marsh Modifiers
        - Almost immediate disconnect between tidal network and modern marsh
        - Channel morphology tends to be representative of marsh age but there are complications – i.e. reoccupying antecedent channels in a restoration site; levee failure that affects existing channel network, ponding in restoration sites, overfilled marshes (dredge material)
- Annie Sneed
    - Adding a new metric: channel network typology; did a lit review
    - 

    - Build off of this paper, added new ones;
    - Four main categories: channel shape, channel complexity, channel density, channel tidal connectivity
    - Build off of Pye and French 1993 - hope to identify 9-10 typologies but it's still an open question
    - Jeremy: Open ended question - multiple typologies for channel networks within the same marsh - how do we deal with that?
- Questions
    - Julian - who's the intended audience, managers may be more interested in what's the best typologies, scientists might want a more quantitative output
        - Jeremy - it's for us, TAC, WRMP data users; useful to split up marshes into families, might have to manage them differently based on channel

network; value of WRMP is not just about physical processes so hoping to start conversation about tidal morphology and value for birds, fish
        - Julian's follow-up question was answered by inclusion of what birds like
            - The smaller channels are important for some birds, and we don't capture those well in a way it can be analyzed
    - Stuart - great, appreciates Jullian's question - marsh restoration design and ecological functions of different types of channels; designing for an uncertain future
        - Jeremy - please send ideas
    - Alison Weber-Stover - NOAA Federal - tie in to biological outcomes for aquatic species
        - Differences between when levee is left on outside vs breach
        - Now we are experimenting with novel restoration approaches (beaches etc), are we thinking about these shoreline edges as well that's part of the typology. Or just channel network.
        - Jeremy - WRMP is an ongoing train, and we are just starting out in the station. Hopefully we can get a good grounding in typology. We'd like to expand it more to incorporate. But in the short term, we have deliverables! Those are tied to marsh.
            - Channel Network Typology Assignment (RWQCB deliverable)
            - Marsh Typology Assignment (WRMP deliverable)
            - Would like Feedback from TAC and Workgroups, especially fish and bird.
        - Ali is excited about this
        - Alex Braud- doing shoreline topology work for next year, separate than WRMP
    - Christina Toms is excited about this and thinks that it will serve as a model for other regions
- From chat
    - Josh C. - Please make sure the typology is practical. For example, "types" should not just helps us understand marsh form and function and evolution, but also help guide or adjust or tune management and regulatory actions. I expect you know this, but just making sure …



    - Pete K. - Quantitative definitions distinguishing categories is going to be important so it's not subjective, but I'm sure that's planned and just doesn't fit all on a few slides. Maybe something that can be classified by a GIS tool..?
    - Levi - I imagine that this will be incredibly useful for faunal associations. I foresee correlating mutivariate typology classifications (scaled at the OLU level, for example) with what we are observing in aquatic communities. (a lot of thumbs up's)

    - Julie Gonzalez - Agree with Levi. This will be useful for evaluating veg or animal responses to restoration or through time either by comparing similar typologies or adding as a variable in an analysis, could be either categorical like the suggested frameworks or a quantitative index value. Either way it will be super useful and glad this is happening!
    - Stuart - Here are first pass on some technical aspects: Overall, definitely connect with Peter Baye as he has a lot of perspectives on typology (surprise surprise!!). On marsh type, excellent and will stare at further. Jeremy is right so much variation. On channels: include dendritic metrics, sinuosity has a mathematical computation which can be applied to or in place of sinuous/semi-sinuous, density has linear and aerial metrics, connectivity needs to defined not clear what is meant (maybe how far any point on marsh plain is from a channel? If so, we have metrics for that from IRWM).
        - Jeremy - Peter wrote the original WRMP marsh typology.

6) **Next Steps and Wrap Up** - Christina Toms (RWQCB) and Donna Ball (SFEI)

- 2024 Remaining TAC meeting schedule (meetings from 9-11 AM) Friday, Dec 6
    - Christina Toms would like to do a recap of what all has happened before getting to the ‘fun part’
- Please join the BHM Webinar on 10/15
- People & Wetlands WG meeting 10/23
- Follow Up:
    - Tell people to email April to coordinate, possibly a smaller group who is really interested in the Project Tracker data layer might want to get together later.
        - Originally asked for Oct 23, but Oct 28 might be ok
        - Want this done by early November (we want it to be better, not perfect)
        - Outward facing + explanation by late November
    - Be sure to include the channel typology discussion in the Bird WG